

The Effective of Training Program for the Development of Knowledge about the National Professional Standards among the Teachers of Secondary Vocational Education in Jordan

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Abstract

This study aimed to investigate the effective of training program for the development of knowledge about the national professional standards among the teachers of secondary vocational education in Jordan. The researcher prepared an accumulated test about the knowledge of national professional standards, include (42) questions spread over seven areas (education philosophy, teaching planning, teaching implementation, students' learning assessment, teacher self-growth, profession values and ethics, and academic and technological knowledge) and for each area six paragraphs. Study members consist of (67) vocational schools' teachers at the directorate of education of Irbid first area, at the first term of the 2015/2016 school year, who were selected at the available way, where the single group design was used by implementing the accumulated test backwards (pilot study) on the study members to identify their weaknesses, build the proposed training program according to the results, and then implement this program on the study members for two weeks, and finally implement the accumulated test forward by using the T-test for single group. The study results showed a statistically significant difference at the level ($\alpha = 0.05$) between the backward and forward arithmetic means of study members performance on the national professional development standards knowledge improvement test as a whole, and for each area due to the proposed training program, which means the existence of effectiveness for the proposed training program in knowledge development about the national professional development standards at the vocational educational teachers, where this effectiveness ranged between (medium) and (very strong).

Keywords: development of knowledge, national professional standards, training program

1. Introduction

Education becomes something undeniable; it's a vital engine for various businesses, it's a human right, an essential tool to achieve the sustainable development, and a need to develop the economy and life in its various economical, vital, and social paths. The education and training technical and vocational formulate one of the main pillars for social and economical growth of any society. It's an educational and training process that adopted by the educational institutions to increase the effectiveness of individual in all areas of social and economical life, and therefore increase the scientific and technological development, which seen through the fields of production and development (Al-Quran, 2009). It seeks to gain individuals the technical and behavioral skills to meet the labor market needs, develop their production capacity, increase their work perfection, and provide the labor market with the manual skills and the appropriate scientific and practical competencies, which help to face the structural imbalance between supply and demand in the labor markets, and may lead to increase the self-confidence, improve the job satisfaction, and the beneficiaries satisfaction of production (Halabi, 2012).

The development of vocational education and training systems started in the early 1970s, in terms of the policies, objectives, programs, structures, patterns, and levels, where this type of education and training is relatively new compared with the other educational systems and the majority of Arabic countries were paying attention mostly to the public education at the expense of vocational education (Matar, 2008). Teacher consider cornerstone in the educational and teaching process, and the one who have the capability to influence and change the elements of this process to the best, which requires from teacher to possess a set of characteristics, skills, and knowledge that enable him (her) to perform the job and do the role efficiently and effectively (Al-Darayseh, 2014). If the learner

considers focus and center of educational process, then the teacher is the cornerstone which depend on him (her) the success of this process, and to do this major role the teacher has to pay attention to two groups of interrelated factors, the first group relate to the main and personal decisions of teacher, which include rehabilitation, in addition to the personal readiness, awareness, and special orientation, but the second group relate to the external elements that are influence by the education system level, its development rate, and the prevailing social and economical circumstances, more than its influence with the special capabilities and personal readiness's of teachers. This second group include the curriculum and textbook, the educational administration and the different educational possibilities, such as school building and structure, educational equipment, methods, and tools, and the accompanying activities, as well as other effective factors that contribute to support the teacher job and the growth of his (her) capabilities and competencies, such as educational supervision, on the job training, and the physical and nonphysical incentives.

The Ministry of Education accomplished a great deal in the field of educational development through the comprehensive review of the entire educational process, in term of curriculums and textbooks, evaluation tests, and many things that include the teacher as a center or cornerstone of the educational process, which entailed rehabilitation and training by improving the skills and knowledge, in a way that the teacher through it can deal with real life. Accordingly, the Ministry of Education made an initiative to set up a conference for educational development in (2006); where the most important results of it was the adoption of national vocational development standards for teachers, where these standards represented in the following fields: philosophy of education in Jordan, teaching planning, teaching implementation, evaluation of student's performance, teacher self-growth, career ethics, and academic and technological knowledge (Department of Education, 2006). It's worth mentioning that vocational education plays an active role in raising individuals and contribute to build their integrated personality, and also contribute to give learners the vocational skills that affect their daily lives, work to instill love of the vocational and handiwork toward the various professions, reveal their readiness, preparations, capabilities, and preferences, develop the positive trends and directions, in addition to the contribution toward achieving a balanced development of the physical, mental, and emotional capabilities, and ethical values (AL-Tuweisi, 2004; Mohamad & Heong, 2012).

The focus at the educational development conference were on a series of the fundamental issues in education, the most important of those are professional development of teachers through their participation in a group of activities and events that aim to develop their knowledge, skills, and behaviors, in a way that empower them to perform their works efficiently and effectively. Ali (2001) believed that success of the educational institutions work in light of the contemporary educational approaches or trends, and the vast amount of knowledge in the field of innovations and inventions, depend primarily on the teacher preparation process and his (her) proper vocational development, which stand on clear scientific methodology that enable the teacher to enhance his (her) capabilities, knowledge, skills, and behaviors, where he (she) becomes able to handle the circumstances of the current and future reality, according to the fundamentals of knowledge theory, survey method, and problem solving.

The applied fields of the modern educational literature emerged as one of the educational process elements, where the UNESCO in the course of its talk about the concept of education, it cover all of the actions, functions, and effects that are directed toward the individual, in order to develop and refine his (her) intellectual, knowledgeable, skillful, and behavioral capabilities, in a way through it he (she) can develop his (her) personality to the fullest possible degree, in order to positively contribute to the development of society that he (she) lives in, under the prevailing ethical system. (Shin Steiner kea) consider the development of professional and vocational competency, and the improvement of work loyalty and devotion, the first goal of education among the individuals who leave the first basic school, while (O'Conner) draw attention to the preparation field of education objectives, and (Edgar Ford) went even farther than that to emphasize in his writings to expand the base of public education, to necessarily include the technical and practical skills, by providing the integrated and balanced dimensional teaching and educational environment, but Al-Safa Ikwans consider that vocational education is part of the required science group to educate the individual, while Bin Sina concentrated clearly on the practical and applied dimensions of human knowledge (Al-Healeh, 1998). The proper educational approach requires handling of the vocational education within a public education system framework, where we start developing it by itself, as a reality we live in and work our way up to transform it into a system of an integrated parts, interconnected paths and levels, and standardize thought and goals, considering that education is an entangled system, where this perspective impose to perform a comprehensive and overall review, on the basis that education parts and components are interrelated and integrated, despite the difference of its systems and types (Al-Hajj, 2002, p. 203).

Given the evolution in the field of educational science, need became an urgent to the process of organizing the educational process, in term of paying attention to inputs, such as the criteria and foundations which based on it,

the curriculums and development programs are adopted for the professional and vocational disciplines, where there are many global studies in the professional development field of vocational teacher, but locally, the studies in this area seem rare; up to the researcher's knowledge. There are multiple studies that dealt with the occupational criteria or standards for various disciplines, where the (California Commission on Teacher Credentialing, 2007) initiate a study that aimed to formulate the requirements needed for the professional growth and improvement of teacher, and the need of teacher to pass several tests, such as reading and writing skills, and teaching basic skills, while (Vargas, 2007) study was interested in highlighting the most important issues about teacher accreditation and approval, by conducting some interviews with teachers of the private schools, where the results showed the existence of some requirements that should be pursued by the private schools; exactly like the one in the public schools, in term of the specified professional criteria for selecting teachers, but the study of (Phillips, 2008) indicated that vocational development of teacher consider an important component for the continuation teacher's efficiency and quality, in order to perform his (her) educational functions; which affect his (her) performance in the teaching halls or classrooms, to play a major role in the school reform and the development of its educational programs.

Al-Dahish (2009) conducted a study that aimed to evaluate the performance of mathematics teachers in the government schools of the Ministry of education at Riyadh in Saudi Arabia, for the 2009/2010 academic year, in light of the contemporary professional standards, where two tools were applied: a questionnaire to determine the professional standards of high school math teachers, and note card to define the availability level of professional standards in the performance of mathematics teachers. The results of this study showed the existence of statistically significant, at low degree for the availability of (37) indicators from the total of (65), the availability of (3) indicators at medium degree, and also the availability of (3) indicators at high degree, in addition to the nonexistence of statistically significant for the availability of (13) indicators.

Al-Eleamat (2010) conducted a study to detect the practice degree of first basic school teachers in Jordan to the professional competencies, in light of the national standards for teacher professional development, from the perspective of principals, and educational supervisors, where the results showed a medium degree for the practice level of first basic school teachers in Jordan to the professional competencies, in light of the national standards for teacher professional development. Al-Hussain (2012) also conducted a study in Syria that aimed to design and study the effectiveness of proposed training programs, in order to improve the vocational performance of first session teachers from the basic education, in light of the new curriculum requirements, where the implementation of an accumulated test and backward and forward notice card were completed to measure the skillful and knowledgeable field, by implementing the proposed program on the study group of (40) female teachers. The study results showed the existence of statically significant difference between the female teachers' backward and forward average degrees for the accumulated test and notice card, in favor of the forward implementation, which indicate the existence of effectiveness for the proposed training programs.

Through the brief review of theoretical literature and previous studies, it show that studies which dealt with and talked about the topics of professional standards in research and study are few and didn't reach the required level, in order to improve the performance of the entire educational process, therefore this study came to reveal the importance of putting the stress on the training needs of the vocational teacher, through curriculums and training programs for teachers that include knowledge and skills, which align with the career developments in the labor market, where they can recognize it, handle it, and adopt it in their daily reality inside and outside school, and to be aware of the process of restoring the production and construction of social reality, which are practiced by the educational system; this way teachers themselves can contribute to the educational process.

2. Study Problem and Question

In order to achieve the educational objectives and reach a quality outputs from the educational process, the education system should have an effective methods in the performance of systematic work, where it will include providing the appropriate bases and criteria for judging the outputs quality of the entire educational process, by using powerful and effective tools and measurements to verify that performance contain the curriculum contents, teaching methods and strategies, and the potentials and essentials for the educational process success. In addition the teacher is the most important role, where it will be an active and effective role that he (she) execute it with sincerity and perfection, where in light of those principles and standards teacher can make decisions about what students learn, how they learn, what they learn, and why learning it, in order to gain the required knowledge, experiences, and skills for their professional and vocational development. Therefore, this study came as an attempt to propose a training program for the vocational education teachers in Jordan, and to reveal its effectiveness, and more specifically this study came to answer the following question:

What is the effectiveness of the proposed training program in the development of vocational education teachers' knowledge, for the high school in Jordan about the national professional development standards? It emerge from this question the following zero hypothesis: "there isn't any statistically significant difference at the level ($\alpha = 0.05$) between the backward and forward of the two arithmetic means for the study members' performance on the accumulated test related to the knowledge level of professional and vocational education teachers about the national professional development standards, and each field of it, due to the proposed training program.

3. Study Importance

The study importance shows through the following two major fields:

First: theoretical importance field, which deals with a proposed training program and measure its impact on the knowledge development of the national professional development criteria at secondary vocational education teachers. This study can benefit the teachers by introducing a training program suitable for implementation, get the attention of vocational education supervisors and teachers, at the secondary level to the importance of using proposed professional and vocational programs, and also this current study provides Arabic language teachers with theoretical information about the training program and its components, its implementation mechanisms, and how to procedurally implement it, which may lead to develop the learners level in learning the vocational concepts.

Second: applied and practical importance field, which derived from the results of this study, and the usefulness level of these results for the accountable of these vocational concepts education processes.

4. Study Limitations and Boundaries

Study limitations:

The study was limited to (67) vocational secondary education male and female teachers at the public schools of Irbid governorate, for the academic year 2015/2016. The study was limited to accumulated test that made up of seven fields (philosophy of education, teaching planning, teaching implementation, student learning evaluation, teacher self-growth, career ethics and values, and academic and technological knowledge), and the results generalization are determined by the constancy and sincerity of the tool.

Study boundaries:

Study was limited to the secondary vocational education teachers in the Directorate of education schools, at first Irbid for the school year 2015/2016, and on the researched seven areas included in this study, which works through it the national vocational and professional development standards.

5. Study Methods and Procedures

5.1 Study Methodology

Current study followed in its procedures the single design group, where a backward and forward accumulated test was implemented to determine the level of knowledge about the national professional development standards among the teachers of secondary vocational education.

5.2 Study Members

Study members consist of (67) secondary vocational education female and male teachers at Irbid governorate Directorate of education schools, (38) were male and (29) were female teachers. They were selected intentionally, where the proposed training program was implemented on them for a period of two weeks.

5.3 Study Tool

To achieve the study goal, researcher prepared an epistemic or knowledge accumulated test, which consist of (42) paragraphs of the multiple choice type, distributed on seven areas (philosophy of education, teaching planning, teaching implementation, student learning evaluation, teacher self-growth, career ethics and values, and academic and technological knowledge), with six paragraphs for each area to measure the knowledge level of the national professional development standards, and the test was prepared after reading the educational literature, the relevant previous studies, and the advanced vocational education curriculums.

5.4 Procedural Definitions

- **Vocational & professional development:** a process of building the capability, expertise, and skills of the vocational teacher, in order to reach the best methods and improve the practice and educational performance of the teacher.
- **National standards:** are a set of properties and basics, which through it we can judged the quality of required opportunities to achieve the professional development of the secondary vocational education teachers in

Jordan.

- **Secondary vocational education teacher:** specialize teacher in one of the vocational science courses, and holds a degree that qualify him (her) to teach the agricultural, industrial, health, hotel, and other subject or field.

5.5 Accumulated Test Sincerity

To verify that the test measures the knowledge level according to the national professional development standards among teachers of secondary vocational education, it was displayed in its original form that consisted of (48) paragraphs on a group of (12) arbitrators who have the competence and experience in the vocational education, three of those are university faculty members in the vocational education field, one university faculty member in the field of measurement and evaluation, six vocational education supervisors, and two teachers in the English and Arabic language, where the adjustments were done according to their notices and marks, bringing the number of paragraphs to (44), where the arbitrators' opinions came to ensure and confirm the integrity of test. Also, the paragraphs were analyzed to calculate the difficulty and distinction coefficients of the paragraphs, in order to detect the weak ones, two paragraphs were weak and were deleted, and therefore the final version of the test become (42) paragraphs. In light of the paragraphs analysis, test specifications table was built, the appropriate time for testing was selected, and its instructions clarity were specified.

5.6 Accumulated Test Consistency

To verify the consistency of the test, it was implemented on an exploratory sample from outside of the study members, which consist of (20) teachers, to calculate the appropriate time of the test, and find out its instructions clarity level. The test was repeated again after two weeks from the first test, where the reliability and consistency coefficient (Pearson correlation coefficient) amounted to (0.89), which is acceptable and appropriate for the purposes of this study. For further validation of the test paragraphs appropriateness level of the study members; the difficulty and distinction coefficients were calculated for each paragraph on the test, and the difficulty level of the paragraphs ranged between (0.33-0.64), while the distinction coefficients of paragraphs were between (0.39 – 0.71), and accordingly these results are acceptable and appropriate for the purposes of this study.

5.7 Study Procedures

The study went through the following steps, and procedures:

- 1) Review the relevant theoretical literature and previous studies, where the researcher found after reviewing the relevant educational literature and accessing a group of the international, regional, and local experiences in the field of professional standards, that professional development requires a knowledge of the science fundamentals, by absorbing the knowledge related to the process survey and proper vocational scientific research, where the science teachers must have a broad base of systematic scientific knowledge and understanding of the facts and the scientific concepts, and link theory and practice together in teaching the curriculums, taking into account the human, social, and personal issues related to the development process of those standards. Also, the professional development requires alignment between the theory and practice, the knowledge of students' needs and educational situations, and to consider the individual differences among learners, and must also base the evaluation process on proper methodological fundamentals, through effective tools that can be noticed, and measured through the trainee's performance. The marked improvement of the learning process is required, where the needs of learners today aren't necessarily the same tomorrow. Depending on that, the researcher found it necessary to highlight the national professional development criteria or standards, which are represented in the following seven areas: (philosophy of education, teaching planning, teaching implementation, student learning evaluation, teacher self-growth, career ethics and values, and academic and technological knowledge).
- 2) Conduct an exploratory study, to detect the level of secondary vocational education teachers about the national professional development standards, by implementing the accumulated test on the study members, where it revealed that (8%) of members have high knowledge (their marks on the accumulated test were 30 and more) of the national professional development standards, (86%) of them have (medium) knowledge (their marks on the accumulated test were between 15-29), and the remaining (6%) have (low) knowledge (their marks on the accumulated test were 14 or less).
- 3) Prepare the proposed training programs according to its seven areas or fields: (philosophy of education, teaching planning, teaching implementation, student learning evaluation, teacher self-growth, career ethics and values, and academic and technological knowledge), where it showed from the survey results (the implementation of accumulated test on teachers), the distribution of test paragraphs into three levels (high (30

and more), medium (15-29), and low (14 and under)), to be able to identify the areas and the paragraphs with the low and medium cognitive level, in order to build the proposed training program for the vocational secondary education teachers, who have shown a clear weaknesses in those areas. Researcher adopted the self-learning principle for the individual in building this training program, according to the following:

- Identify the basic principles to build this program, in term of the concepts and terminologies it contain.
 - Classify the trainees into levels, depending on their training needs.
 - Identify and formulate the general objectives of program, as well as the private one.
 - Identify and formulate the content of training program.
 - Select the appropriate methods and means of training process.
 - Select the appropriate evaluation methods for the training program.
- 1) Find the training program sincerity by presenting it on a group of arbitrators.
 - 2) Prepare the study tool represented in the accumulated test to determine the knowledge level of national professional development standards among the secondary vocational education teachers, by verifying its sincerity and constancy, and finding the difficulty and distinction coefficients of its paragraphs.
 - 3) Implement the test and re-implement it again on the sample survey, which consist of (20) teachers, to check its consistency, and estimate the appropriate time for it.
 - 4) Select the study members represented in the secondary vocational education teachers at first Irbid Directorate of education schools, their amount (67) teachers.
 - 5) Implement the accumulated test backward on the study members, and implement the training program on them for two weeks, and then implement the accumulated test forward.
 - 6) Collect and enter data into the computer, and use the appropriate statistical process for the study question, using (SPSS) program, draw and analysis the results, organize it in tables and charts, answer the study question, and verify its hypothesis and interrupt it.
 - 7) Provide a set of recommendations in light of the study results.

5.8 Study Variables

This study examined two variables, the independent variable represented in the proposed training program, and the dependent variable represented in the knowledge level of secondary vocational education teachers about the national professional development standards.

5.9 Statistical Analysis

To answer the study question, according to the two arithmetic means and standard deviations for the performance of backward and forward study members on the accumulated test related to identify the knowledge level of secondary vocational education teachers about the national professional development standards, and to detect the effectiveness of the proposed training program, the researcher used the (One Sample t-test).

6. Results Display and Discussion

The result of study question which stated: “What is the effectiveness of the proposed training program in the development of vocational education teachers’ knowledge, for the high school in Jordan about the national professional development standards?” It emerge from this question the following zero hypothesis: “there isn’t any statistically significant difference at the level ($\alpha = 0.05$) between the backward and forward of the two arithmetic means for the study members’ performance on the accumulated test related to the knowledge level of professional and vocational education teachers about the national professional development standards as a whole, and each field of it, due to the proposed training program”. To answer the study question and verify its zero hypothesis, according to the two arithmetic means and standard deviations for the performance of backward and forward study members on the accumulated test related to identify the knowledge level of secondary vocational education teachers about the national professional development standards, and to detect the effectiveness of the proposed training program, as in Table 1 below:

Table 1. The two arithmetic means and standard deviations for the performance of backward and forward study members on the accumulated test related to identify the knowledge level of secondary vocational education teachers about the national professional development standards

Fields	Backward performance		Forward performance	
	Mean	STDEV	Mean	STDEV
Philosophy of education	18.22	2.25	19.23	3.29
Teaching planning	14.72	2.69	16.90	3.51
Teaching implementation	19.00	3.02	21.70	2.86
Student learning evaluation	15.09	2.94	18.55	3.29
Teacher self-growth	20.38	2.32	21.68	3.02
Career ethics and values	16.15	2.17	17.30	1.91
Academic and technological knowledge	12.74	1.97	13.90	2.39
Tool as a whole	118.33	10.34	129.00	12.89

It noticed from Table 1 the existence of external difference between the backward and forward arithmetic mean for study members performance on the accumulated test, as a whole and each field of it related to the knowledge level of secondary vocational education teachers about the national professional development standards, where the forward performance better than the backward performance, and to identify the statistical significance of those virtual differences; the One Sample t-test was used, as shown in Table 2 below:

Table 2. The backward and forward arithmetic mean for study members' performance on the accumulated test related to the knowledge level of secondary vocational education teachers about the national professional development standards

Fields	Backward performance	Forward performance	T	Sig	Effect size
	Mean	Mean			
Philosophy of education	18.22	19.23	7.45*	0.000	0.91
Teaching planning	14.72	16.90	4.56*	0.000	0.56
Teaching implementation	19.00	21.70	4.45*	0.000	0.54
Student learning evaluation	15.09	18.55	7.38*	0.000	0.90
Teacher self-growth	20.38	21.68	10.33*	0.000	1.26
Career ethics and values	16.15	17.30	9.72*	0.000	1.19
Academic and technological knowledge	12.74	13.90	11.02*	0.000	1.35
Tool as a whole	118.33	129.00	8.66*	0.000	1.06

* Statistically significant.

It noticed from Table 2 that all statistical significance values for all fields of the test and for the test, as a whole less than the statistical significance level of ($\alpha = 0.05$), which indicate the rejection of the zero hypothesis and accept the alternative: "There is statistically significant difference at the statistical significance level of ($\alpha = 0.05$) between the backward and forward arithmetic mean for study members performance on the knowledge development test of the national professional development standards, as a whole and for each field of it, due to the proposed training program", meaning the existence of effectiveness of the proposed training program in the knowledge development of the national professional development standards among the vocational education teachers. Cohen equation (Cohen, 1988) was used to calculate the effectiveness (effect size), where its value amounted to (1.06) for the test as a whole, which consider strong effect size, while its values for the test fields ranged between (0.54), which indicate a moderate effect size and (1.35), which indicate very strong effect size. Therefore, the results of current study showed the effectiveness of a training program for knowledge development of the national professional standards, among the secondary vocational education teachers in Jordan.

The training program effectiveness can be attributed to a variety of interrelated factors, perhaps the most notable is the educational climate the proposed training program provided, the exercises and activities offered in an orderly and clear way, and the proposed training program was used according to integrated steps of educational procedures, which focused on linking the past experiences of teacher with the new knowledge. It may also be attributed to the role that training program grant to the teacher, on the planning, implementation, and evaluation

level, represented in the follow-up of students and directing them, and involve them as a basic element in all of the educational processes, as the focus of this process, where the teacher prepare the appropriate educational environment for the learning readiness, then allow the freedom for students to participate, which helped them to understand and formulate, and reflected positively on their assimilation of the professional and vocational concepts. It can be attributed to the classroom situation that was provided by the proposed training program, which allowed trained teachers the opportunity into a classroom incorporation, learning, and experimentation, and testing without feeling the failure, threat, or fear caused by watching their work performance. It may be also due to the effectiveness of the proposed training program by raising the motivation of the trained teachers and its effect to achieve their desire for knowledge and its acquisition, and their large knowledge recognition of the national professional development standards, and satisfy their needs. It may be credited to the nature of the proposed training program, which consider the learner as major dimension in the educational process, training, practice, and follow up. In addition, the nature of activities and tasks which gave learners the ability to improve their knowledge acquisition better about the national professional development standards.

7. Recommendation

In light of the study results, researcher recommends the following:

- Perform further studies to identify the effect of proposed training program in the knowledge development of secondary vocational education teachers about the national professional development standards in the directorates of education at other provinces.
- Adopt this program to train the secondary vocational education teachers to raise their knowledge level of the national professional development standards.
- Hold workshops and training programs to train the vocational education teachers on the use of this program, in order to develop their knowledge of the national professional development standards.

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